

The study of the role of metal ions in development of prostate tumors

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It is known that under normal conditions, the epithelial cells of the peripheral zone of the prostate are characterized by a distinct energy metabolism. Unlike other cancers, the malignant transformation of prostate epithelial cells is accompanied by increased activity of the Krebs cycle and, consequently, increased electron production for the electron transport chain. This metabolic reprogramming is associated with a sharp change in zinc concentration and significant accumulation of iron ions in prostate cancer cells, which in turn may contribute to tumor progression.

Based on this, the aim of our study was to investigate the role of metal ions (zinc and iron) in the development of prostate tumors. To achieve this goal, we analyzed changes in zinc concentration in prostate tumor tissues and blood serum. Additionally, we studied the alterations in iron levels, as well as the concentrations of proteins involved in iron transport and storage-transferrin and ferritin-in the blood of men diagnosed with prostate cancer.